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R17*Gaming machine with transparent symbol carriers***Field of the Invention**

This invention relates to a gaming machine. More particularly, the invention relates to a method of enhancing a screen display of a gaming machine and to a gaming machine screen display.

Background to the Invention

Players regularly playing gaming machines quickly tire of particular games. It is therefore necessary for manufacturers of these machines to develop innovative game features which add interest to the games. In so doing, it is hoped to keep players amused and therefore willing to continue playing the game as well as to attract new players. Also, with the growth that has occurred in the gaming machine market, there is intense competition between manufacturers to supply various existing and new venues. When selecting a supplier of gaming machines, the operator of a venue will often pay close attention to the popularity of various games and their displays with the patrons of the venue. Therefore, gaming machine manufacturers are keen to devise games and/or gaming machine features which are popular with the players and which are also distinguishable from gaming machines of other manufacturers as a mechanism for improving sales, retaining customers and attracting new customers.

These days, particularly with spinning reel type games, the reels and the symbols carried on the reels used by the various manufacturers can be very similar to each other and it may be hard for a player or an operator of a venue to determine, at a glance, which manufacturer has manufactured a particular machine.

The invention will be described with reference to a spinning reel-type game and, more particularly, a video simulation of spinning reels. It will, however, be appreciated that the invention is equally applicable to other types of games played on gaming machines such as card games, bingo game, keno games, or the like.

In a video simulation of a spinning reel, a background of a symbol is opaque to give the appearance of a periphery of a reel. In a typical screen display, three reel positions are visible for each reel. Accordingly, symbols

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are arranged end-to-end to provide an appearance of an opaque periphery of a reel.

Technically, in the terminology of gaming machines, a symbol incorporates a background portion plus an indicium carried on the background portion. It is the background portion of the symbol that is opaque to provide the appearance of a part of the periphery of the reel.

However, for ease of explanation in this specification, the term "composite symbol" shall be used with a background portion of the composite symbol being referred to as a "carrier" and the indicium arranged on the background portion being referred to as a "symbol".

Summary of the Invention

According to a first aspect of the invention, there is provided a method of enhancing a screen display of a gaming machine, the method including the steps of:

- creating a background scene for a game screen;
- creating a plurality of composite symbols to overlie the background scene; and

- rendering at least a portion of each composite symbol transparent to enable the background scene to be viewed through the composite symbol.

As indicated above, the invention shall be described, for ease of reference, with reference to a spinning reel type game in which the screen display embodies a video simulation of a number of spinning reels. In most gaming machines, the screen display comprises from three to five spinning reels. Further, as indicated above, at least three positions are visible in respect of each reel on the screen display so that a matrix of composite symbol positions is displayed on the screen. In a typical example, the screen display comprises a matrix of 3 x 5 composite symbol positions.

Typically, the method may include rendering a carrier of each of at least certain of the composite symbols transparent so that, with a matrix of composite symbols displayed on the screen display, an appearance is created that a periphery of each of the reels is transparent. In so doing, the background scene, applied to the game screen is visible through said transparent carriers of each of the composite symbols.

The method may include rendering the portion of each composite symbol transparent by an appropriate software implementation. In

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particular, the method may include setting the portion of each composite symbol to an appropriate alpha channel value in an alpha channel range.

Accordingly, the method may include employing an objects based graphics system for development of the composite symbol with portions of
5 the composite symbol being rendered opaque.

Further, it will be appreciated that, in use, when a composite symbol forms part of a prize winning combination it flashes.

Hence, the method may include creating a representation of a flashing composite symbol.

10 The method may include placing a part of the background scene over the composite symbol and placing a flashing composite symbol animation on top of the part of the background scene to provide a flashing composite symbol. Instead, the method may cause the actual composite symbol itself to be flashed on and off directly on top of the underlying part of the background
15 scene so that the background scene remains visible and any background animations, if applicable, continue while the composite symbol flashes.

According to a second aspect of the invention, there is provided a gaming machine screen display which includes:

a background scene for a game screen; and
20 a plurality of composite symbols which overlie the background scene, at least a portion of each composite symbol being transparent to enable the background scene to be viewed through the composite symbol.

A carrier of each of at least certain of the composite symbols may be rendered transparent. The portion of each composite symbol may be
25 rendered transparent by an appropriate selection of alpha channel value in an alpha channel range.

The screen display may comprise a composite image with the composite symbols overlying the background scene.

The screen display may incorporate various animations, either in the
30 background scene, in the composite symbols themselves or in a foreground part of the screen display where the animations interact with particular composite symbols of the screen display.

Brief description of the drawings

35 The invention is now described by way of example with reference to the accompanying diagrammatic drawings.

In the drawings,

Figure 1 shows a three dimensional view of a gaming machine, including a screen display in accordance with the invention;

Figure 2 shows a block diagram of a control circuit of the gaming
5 machine;

Figure 3 shows a background part of a screen display forming part of the gaming machine of Figure 1;

Figure 4 shows a screen display including some composite symbols;

Figure 5 shows a screen display including all the composite symbol
10 visible at any one time;

Figure 6 shows a selection of composite symbols forming part of the screen display, in use, together with their associated transparent carriers; and

Figure 7 shows a flow chart of a manner of implementing the screen display.

Detailed Description of the Drawings

In Figure 1, reference numeral 10 generally designates a gaming machine, including a game, in accordance with the invention. The machine 10 includes a console 12 having a video display unit 14 on which a game 16
20 is played, in use. The game 16 is a spinning reel game which simulates the rotation of a number of spinning reels 18. A midtrim 20 of the machine 10 houses a bank 22 of buttons for enabling a player to play the game 16. The midtrim 20 also houses a credit input mechanism 24 including a coin input chute 24.1 and a bill collector 24.2.

The machine 10 includes a top box 26 on which artwork 28 is carried. The artwork 28 includes paytables, details of bonus awards, etc.

A coin tray 30 is mounted beneath the console 12 for cash payouts from the machine 10.

Referring now to Figure 2 of the drawings, a control means or control
30 circuit 40 is illustrated. A program which implements the game and user interface is run on a processor 42 of the control circuit 40. The processor 42 forms part of a controller 44 which drives the screen of the video display unit 14 and which receives input signals from sensors 46. The sensors 46 include sensors associated with the bank 22 of buttons and touch sensors mounted in
35 the screen. The controller 44 also receives input pulses from the mechanism 24 to determine whether or not a player has provided sufficient credit to

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commence playing. The mechanism 24 may, instead of the coin input chute 24.1 or the bill collector 24.2, or in addition thereto, be a credit card reader (not shown) or any other type of validation device.

Finally, the controller 44 drives a payout mechanism 48 which, for example, may be a coin hopper for feeding coins to the coin tray 30 to make a pay out to a player when the player wishes to redeem his or her credits

To develop a screen display for the gaming machine 10 an objects based graphics system is used. The objects based graphics system makes use of an audiovisual library or media file. Each game 16 played on the gaming machine 10 has its own audio visual library file from which a developer of a program to implement the game obtains characters for use on composite symbols which are dedicated to that particular game.

In order to enhance the appearance of a screen display 50 (Figures 3 to 5) of a game 16 played on the gaming machine 10, a background scene or image 52 is created. For example, for the applicant's Flaming Arrow™ game (Flaming Arrow is a trade mark of the Applicant), the background scene 52 is part of a castle.

Composite symbols for use with the particular game are then created. A selection of the symbols for use in the Flaming Arrow™ game is shown in Figure 6 of the drawings. Each composite symbol 54 includes a carrier 56 and a symbol 58.

For each composite symbol 54, the carrier 56 is selected to have an alpha channel value which renders it at least partly transparent. Alpha channel values generally lie in a range between 0 and 255. For a completely transparent carrier 56, an alpha channel value of 255 is selected. If it is desired that the carrier 56 have a degree of translucence a lower alpha channel value can be selected.

It will be appreciated that, in Figure 6 of the drawings, although the carrier 56 of each composite symbol 54 is shown as black, it is, as described above, transparent.

Once the composite symbols 54 have been generated with their appropriate alpha channel values for the carriers 56, various feature animations etc. are created in accordance with standard game development procedure.

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The feature animations, composite symbols 54 with their appropriate alpha channel values and background scene 52 are merged into an audiovisual library (AVL) media file.

The AVL media file is then added to the software developed for the particular game.

In this software, an alpha mode is enabled so that the alpha channel value of the composite symbols 54 is taken into consideration by the AVL when displaying the composite symbols 54.

If the alpha channel value of each composite symbol 54 indicates that the symbol has a transparency component, that part of each composite symbol 54 will be transparent.

It will be appreciated that, for a spinning reel game, the composite symbols 54 are arranged end-to-end to form the reels 18 of the game 16. With the transparent carrier 56 of each composite symbol 54, an appearance of a reel 18 with a transparent periphery is created so that the underlying background scene 52 is visible through the transparent carriers 56 of the composite symbols 54.

Once the alpha mode has been enabled, the background scene 52 is added to the main game screen by appropriate programming.

Reel symbol animation is then carried out. Reel symbol animation is applicable when a particular composite symbol 54 of one of the reels 18 forms part of a winning combination. Normally, when a symbol of a spinning reel game forms part of a winning combination, that symbol flashes.

In most cases the reel symbol animation can simply involve the relevant composite symbols 54 flashing on and off. Each composite symbol 54 forming part of the winning combination could also animate, for example, with a moving image or could simply fade on and off bearing in mind that a background 52 is now in place. Instead, a part of the background scene could be applied to overlie the relevant composite symbol 54 with the flashing symbol animation then being placed over the top of the overlying part of the background scene to flash to represent the winning composite symbols 54. Instead, the actual composite symbol 54 may simply flash as described above. An example of this is shown in Figure 4 of the drawings where some of the composite symbols are shown in an "off" condition so as to be, effectively, invisible with the background scene 52 then being visible where the composite symbols 54 are in their "off" conditions.

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Payline indicators 60 are shown in Figure 5 of the drawings.

The game feature code and a game binary are implemented using standard game programming procedures.

The game feature code can include animations associated with the composite symbols 54. Once again, using the applicant's Flaming Arrow™ game as an example, an archer shoots flaming arrows at the composite symbols 54 causing them to ignite and various bonuses or features may be awarded in respect of such "burning" composite symbols 54. The operation of the Flaming Arrow™ game is discussed in greater detail in the applicant's international patent application number PCT/AU00/01233 which is incorporated herein by reference.

In addition, other animations may occur either behind the composite symbols 54 in the background scene 52 or in the foreground of the composite symbols 54.

It will be appreciated that the manner in which the images are composited depends on the priorities assigned to those images. Thus, the background scene 52 has a lower priority than the composite symbols 54 so is, effectively, at a greater "depth" than the composite symbols 54. Similarly, a label 62 (Figure 4) designating the denomination of the game has a higher priority than the composite symbol 54 so that it is in the foreground and is always visible.

It is an advantage of the invention that a game screen display 50 is provided which greatly enhances the appearance of the game 16 played on the gaming machine 10. Not only does this provide a more attractive appearance to the game screen display 50 but also enables an operator or a player to determine whose gaming machine 10 is being played by players at a particular venue.

It will be appreciated by persons skilled in the art that numerous variations and/or modifications may be made to the invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly described. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive.